Boeing Commercial Airplane Group
P.O. Box 3707
Seattle, WA 98124-2207

August 18, 1993
R-1150-93-SAC-703

Michael Gallagher
Washington State Department of Ecology
3190 160th Avenue SE
Bellevue, WA 98008-5452

BOEING

Dear Mr. Gallagher:

Subject: Independent Remedial Action - North Boeing Field Fire Training Facility

Enclosed is a copy of the Landau Associates Independent Remedial Action Report, North Boeing Field Fire Training Center, King County Washington. This report is submitted, as required, to update the Department of Ecology (Ecology) as to the status of this independent remedial action.

As indicated, the remedial activity at this site included excavation of petroleum impacted soil for offsite disposal at an approved facility and backfilling with clean material. Analytical results from confirmation sampling indicate all petroleum impacted soils above MTCA Method A cleanup levels were removed as a result of this activity.

Visual observations indicated there may have been some impacted ground water in one portion of the excavation. However, we believe this impact was probably mitigated by the excavation of nearby soils. Further investigation of this localized area is being conducted to confirm these observations. Ecology will be notified as to the results of this action.

If you have any questions concerning this matter or need additional information please contact me or Brain Anderson at 477-2184.

Original signed by

L. M. Babich III
Manager, Environmental Affairs
Renton Division
234-1766, MS 63-41

Enclosure
cc: Don Smith, King County Airport Manager

TECH 86_001

MEETING AGENDA
BOEING - KING COUNTY AIRPORT
MAY 13, 1993

Fire Training Facility Remediation Project

- Remediation Technology
- Schedule
- Site Access
- Well Abandonment
- Access Agreement

Markov Property

- Pre-Construction Investigation - 1992
- Supplemental Investigation - Lease Renewal
- Reporting/Notification

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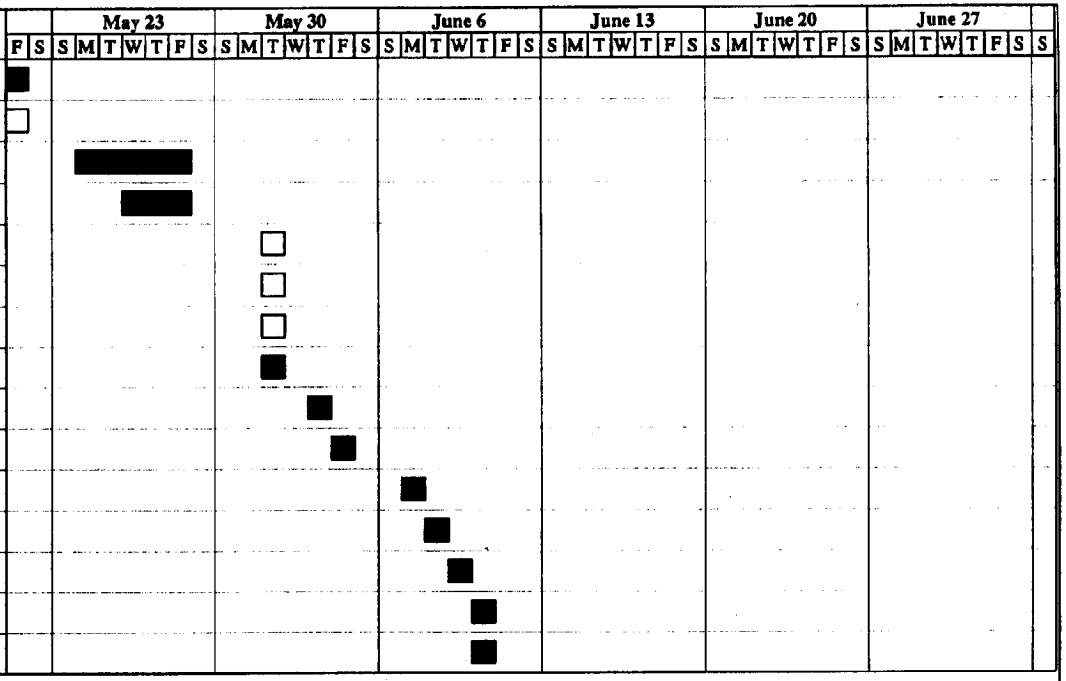
ID	Name	Dura
1	Mobilization	1d
2	Filter Fabrice Silt Fence Installation	1d
3	Excavation & Haulout	5d
4	Backfill & Compaction	3d
5	Place Topsoil	1d
6	Remove Tank Slab	1d
7	Excavate & Remove Tank	1d
8	Sample Hole	1d
9	Backfill & Compact	1d
10	Ditch Excavation	1d
11	Remove Existing CB's	1d
12	Decontamination Of Equipment	1d
13	Hydroseeding	1d
14	Final Cleanup of Site	1d
15	Demobilization	1d



Project: Boeing Fire Pit
Date: 5/11/93

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RCI
ENVIRONMENTAL INC.
Environmental Contractors & Engineers

REMEDIAL ACTION PLAN
NORTH BOEING FIELD FIRE TRAINING PIT
SOIL REMEDIATION

prepared for,

The Boeing Company
King County, Washington

PO Box 6090
Kent, WA 98064

206•852•4690
Fax 206•859•5702

prepared by,

RCI Environmental, Inc.
P.O. Box 6090
Kent, WA 98064

9 May 1993

TABLE OF CONTENTS

I. ACTIVITY SCHEDULE AND SEQUENCE

Upon notice to proceed with construction, RCIE will mobilize the required equipment to the staging area next to the existing underground storage tank (UST) #BF-26. All security fencing, barricades, or barriers will be placed around the Exclusion Zone (EZ) as required. No surveying will be required for this project. These preparatory items will be accomplished in approximately 3 days.

Following completion of the preparatory items listed above, RCIE will begin excavation with a K-907 track-mounted backhoe (or equivalent) at the north end of the Fire Pit. Boeing Environmental will provide on site contaminant screening to determine disposition of excavated soils. Soil designated for disposal will be loaded directly into trucks/trailers for transport to the Regional Disposal Company's (Rabanco) receiving facility at 3rd and Lander in Seattle. Following excavation to the specified limits, Boeing will collect samples to determine if cleanup objectives have been met. Results will be obtained in 24 hours. All liquids generated during excavation will be pumped into a 21,000 gallon temporary storage tank for subsequent sampling/disposal by Boeing.

As excavation is accomplished in each section, Boeing will provide verification that cleanup goals have been attained. Following satisfactory cleanup of the designated excavation area, RCIE will backfill with import material sufficient to attain specified grade requirements. Excavation activities will be completed in approximately 10 days, including tank removal and ditch excavation. Attachment 1 is a project timeline showing an anticipated schedule of completion for each task on this project.

II. SITE SECURITY AND GENERAL SAFETY

The RCIE Superintendent (Ben Reynolds) will control all access to the site. All site workers will sign a daily safety meeting which will provide record of their presence at the project site. A daily site log will be maintained where all other visitors to the site will sign in and out. Each worker will be briefed on the importance of security at this site, and will be charged with the responsibility of immediately notifying their Foreman or the Superintendent of security violations.

A combination of barriers, hazard tape, and security fencing will be used to delineate the Exclusion Zone and areas of limited access. All excavation and containment areas will be considered Exclusionary. Only workers trained in accordance with 29 CFR 1910.120, Hazardous Waste Site Operations, ("trained") will be allowed in these areas. The Support Zone will be established at the northeast end of the excavation area near the existing UST. This area will be the break/lunch area, the safe refuge area, and the command post for all operations. There will be at least one portable phone on site at all times. At the outermost edge of the Exclusion Zone near the Support Zone, a Contaminant Reduction Zone will be established. All affected PPE, equipment, and tools will be cleaned in this Zone prior to exiting. Non-reusable PPE will be discarded into drums/liners, and reusable PPE, tools, and equipment will be washed, rinsed, and staged in the Support Zone.

Lane closures of existing public roadways is not anticipated. Construction warning signs will be placed in the immediate vicinity of each entry/exit location. Flaggers are not anticipated to be required. All trucks used for importing backfill material and for transporting waste off site will be required to obey all local traffic laws. Access to the site for trucks will be through an electronic gate at the Prat and Whitney field office located adjacent to the steam plant on Ellis Street.

III. EXCAVATION, HANDLING, AND TRANSPORT OF CONTAMINATED SOIL

All soil within the limits of the excavation zone designated for disposal will be placed in trucks/trailers for transport to Rabanco's 3rd and Lander receiving facility. Trucks used for transporting waste will be required to use tailgate locks and tarps during all public roadway travel.Final disposal of the material will be at the Roosevelt Regional Landfill.

The excavation process will be conducted starting in the northeast corner of the Fire Pit and will proceed in a southerly direction. The horizontal and vertical extents of excavation will be determined by the Boeing field representative on site. Once the limits of the excavation have been reached, Boeing will collect confirmatory samples to determine if cleanup objectives have been attained. Once confirmation has been received, RCIE will begin backfill operations.

IV. CONTROL OF WATER

As excavation activity progresses, RCIE will maintain a system of dewatering to facilitate efficient digging/sampling and to provide Boeing with a clear view of the pits to make cleanup determinations. As pits are created, trash pumps or submersible pumps will be used to remove accumulated water so that sampling and inspections can be accomplished by Boeing. These dewatering systems will be constantly maintained during the excavation process. Surface water runoff will be controlled to prevent entry or collection of water in excavations or in the stockpile areas. The pumping systems will be adequate to draw the water level down to the bottom of the excavation making the base readily visible. This will allow the consultant to determine the required depth of excavation at any given point. This will also maintain the undisturbed state of foundation soils and allow the placement of any fill or backfill to the required density.

All water pumped during excavation dewatering will be pumped to a 21,000 gallon temporary storage tank. Boeing will sample and characterize the collected water to make proper disposal determinations.

V. BACKFILL

Backfill of the Fire Pit excavation area will accomplished during excavation operations. As sections of the excavation zone are confirmed clean, imported material of the size and specification required will be transported and placed in the designated clean areas. All imported fill material will be placed in approximately 2 foot lifts. Compaction will be accomplished on each lift to the minimum specified density of 90% (ASTM D-1557). Compaction will be accomplished using a hoe pack or sheeps foot roller. Water will be added as necessary to achieve compaction specifications. Compaction testing will be performed at the request of Boeing only. The total area of backfill will be compacted concurrently and continuously as backfill is being placed. In areas of limited access for larger compaction equipment, hand-operated tampers will be used.

RCIE will facilitate compaction testing performed by Boeing as required. Soil samples will be provided upon request. All compaction will be performed to meet field test requirements in accordance with ASTM Designation D1556, D2167, or D2922.

VI. UNDERGROUND STORAGE TANK AND STRUCTURE REMOVAL/DITCH EXCAVATION

Following excavation of the main Fire Pit excavation zone, RCIE will begin removal operations at the existing 3,000 gallon fuel tank. The concrete slab will be demolished and stockpiled for subsequent removal. Cleaning of the UST will be performed by Boeing representatives in accordance with the specifications. Therefore, following removal of the concrete slab, the UST will be excavated and removed. It will be secured above-ground in a pre-determined staging area to be cleaned and disposed by Boeing. Following tank removal, RCIE's registered Site Assessor (Greg Annala) will collect soil samples from the excavation zone in accordance with the Washington State Department of Ecology's Guidelines for Site Checks and Site Assessments for Underground Storage Tanks. Samples will be collected from below the tank and from two side walls. The samples will be analyzed for total petroleum hydrocarbons using the Washington TPH-D method. Upon receipt of analytical data, RCIE will forward information to Boeing for preparation of a UST Decommissioning and Site Assessment report setting forth the findings of the UST closure operation.

In the event that closure sampling reveals contamination above MTCA cleanup levels, RCIE will consult with Boeing regarding further cleanup action. If closure sampling shows acceptable levels of soil contamination, the UST excavation zone will be backfilled in the same manner as described above in Section V.

Once the UST has been removed, RCIE will excavate and remove 2 existing catch basins. Associated piping will be plugged at the edge of the existing roadway. Excavation of the existing ditch will again be to the limits determined by the Boeing representative. All material determined to be contaminated will be removed and transported to the Rabanco facility in the same manner as described above for the Fire Pit soils. Backfill operations at this location will also be in accordance with the above-described methods (Section V).

VII. CLEANUP, DECONTAMINATION AND ENVIRONMENTAL PROTECTION

Once backfill has been completed and compaction requirements have been met, RCIE will place 4 inches of topsoil over all disturbed areas. Hydroseeding will be accomplished in accordance with contract specifications. All affected tools and equipment will undergo a final decontamination process following completion of all work within contaminated environments. A pressure washer will be used to accomplish this final decontamination operation. No equipment or tools will be permitted to leave the project site until Boeing has approved the decontamination process.

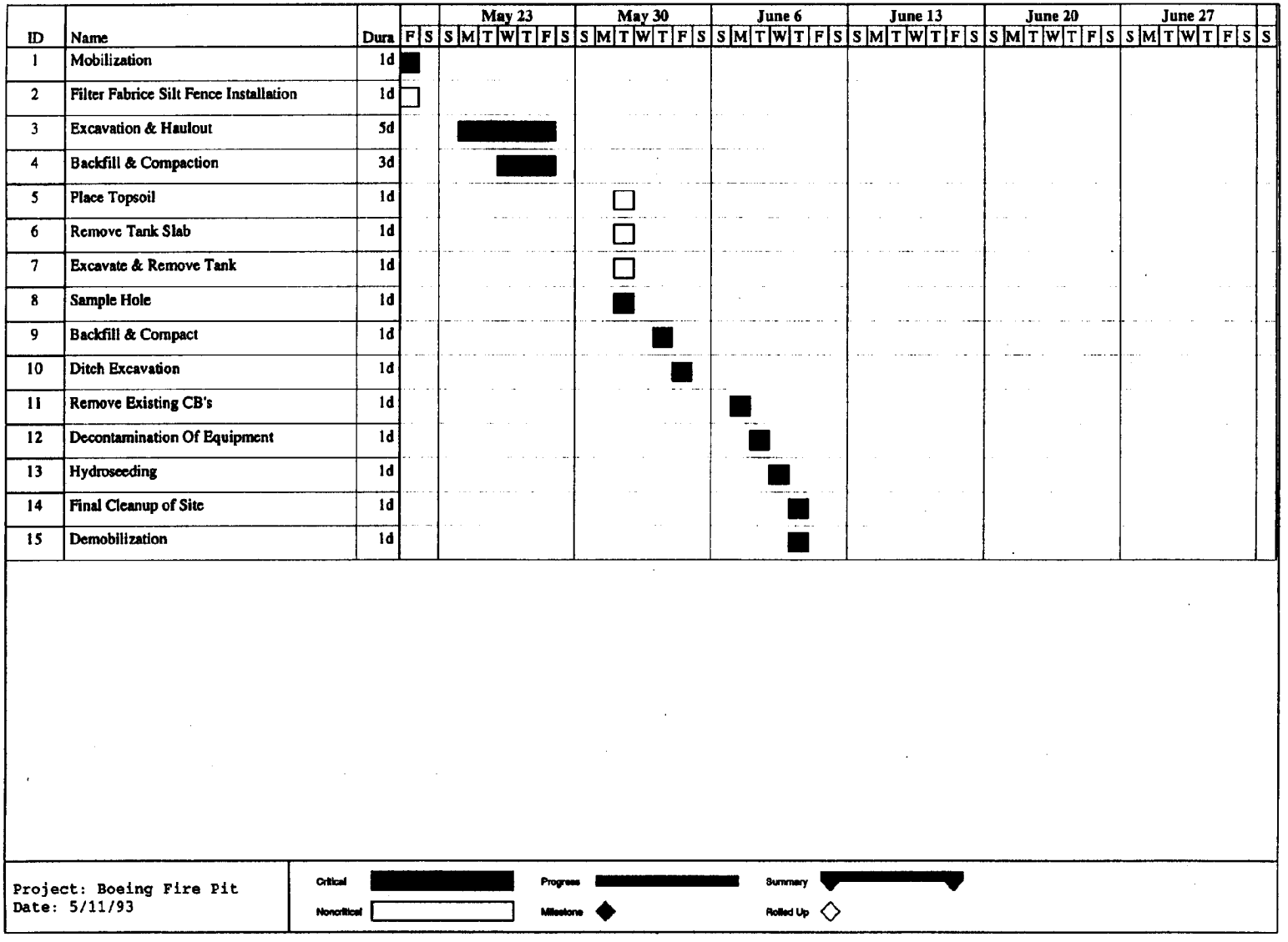
Environmental protection concerns on RCIE projects are as important as worker safety. These concerns are of paramount importance on waste remediation projects. RCIE's project team will be equipped with tools and/or contingency plans for the potential of off-site impacts, and our air monitoring results will be used to define the measures to be taken if action levels are exceeded during monitoring. Also standard at RCIE project sites is a dust control program utilizing dust pallatives such as magnesium chloride or simply applying water to high dust potential areas prior to and during construction activities. The dust control program includes the removal of dust, dirt, and mud from project-affected areas such as parking lots, municipal roadways, and county and state highways.

Other preventive measures will be taken by our remedial action crews when handling contaminated materials. Each crew truck and fuel truck is equipped with emergency contingency and spill response gear. Crews will be required to have visqueen on site for spill containment, and may use visqueen and berms to prevent the potential release of hazardous materials to the environment. Should a spill occur, the team will be ready to respond immediately with spill cleanup equipment and supplies to prevent the migration of materials to surface waterways, storm drains, drainage ditches, sumps, etc. Methods of containment include bermed visqueen, earth berms, absorbent pads, diatamaceous earth, and man-made containment sumps.

During transport of contaminated materials, an important

environmental protective measure involves the securing of loads. RCIE has employed a variety of techniques to insure that loads of contaminated soil do not leak into the environment. If the materials are excessively wet, two methods commonly used are visqueen "diapering" of truck beds, or the use of black mastic around openings in the truck tailgate. Loads of contaminated soil will be covered with tarps, and tailgates will be secured with locks prior to transport.

Some general preventive measures are also employed by RCIE on all project sites. Equipment undergoes daily inspections to determine that all operating systems are functioning properly and that there are no hydraulic oil, lubricating oil, or fuel leaks. In the event that leakage has occurred, field crews are required to take immediate action to mitigate the release and to prevent further leakage or migration of contaminants. During routine maintenance, equipment is placed either on visqueen, or in areas carrying low potential for environmental impact (asphalt or concrete paved areas). If releases occur during maintenance, the same response procedures as above-described are mandated.



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VIII. PROJECT MANAGEMENT AND TRAINING

RCIE's overall corporate organizational structure with regards to safety, accident prevention, and overall project management is defined in the Accident Prevention Program found in the Site Specific Health and Safety Plan. For the North Boeing Field Fire Training Pit Soil Remediation Project, the following project management structure will be used (all RCIE's personnel office phone number is (206) 852-4690, and our 24-hour emergency response number is (206) 859-6995):

Brian Anderson
Boeing Engineer

J.C. Brummond
Senior Project Manager
Vice President, RCIE
Mobile # 949-1617

Ted Noble
Project Manager (Company Contact)
Mobile # 947-5906

Ben Reynolds
Superintendent/Site Safety Officer
Mobile # 279-7379

Foremen and Subcontractors

Office of
The General Counsel

The Boeing Company
P.O. Box 3707, #MS 13-08
Seattle, WA 98124-2207

BOEING

May 13, 1992

Donald W. Smith
Airport Manager
King County International Airport
7233 Perimeter Road
P. O. Box 80245
Seattle, WA 98108

Re: Airport Fire Training Area

Dear Mr. Smith:

Please find enclosed a draft of the Agreement for Site Access which is intended to allow Boeing to proceed with remediation in the Fire Training Area. Please note that the indemnity in paragraph 7 still needs internal Boeing review, but is identical to language previously approved in connection with access to conduct sampling at the Fire Training Area.

Please contact me at your earliest convenience so that this project may proceed in the near future.

Very truly yours,

Taryn M. McCain
Attorney

773:TMM1 * Mail Stop 13-08 * (206) 544-3255 * Fax (206) 544-2020

AGREEMENT FOR SITE ACCESS

This Agreement is made this ___ day of _____, 1993 between King County International Airport ("Airport") and The Boeing Company ("Boeing") (collectively the "parties").

RECITALS:

A. An area at the northwest end of the Airport Property has been used in the past for fire fighter training. The approximate location of this area is shown in Exhibit A (the "Fire Pit Area").

B. Pursuant to the parties' July 27, 1992 Agreement for Site Access, Boeing conducted an environmental investigation of the Fire Pit Area.

C. Boeing now desires access for performing remediation of the Fire Pit Area. Boeing shall utilize the services of one or more contractors (collectively, the "Contractor") for performing such work.

D. The Airport desires to have Boeing conduct remediation of the Fire Pit Area as described in the Work Plan attached hereto.

In consideration of the mutual covenants and agreements herein, including the provision to the Airport of the investigation results, the Airport and Boeing agree as follows:

AGREEMENT

1. Access to Airport Property. The Airport hereby gives Boeing and its Contractor access to the Fire Pit Area, using the access route depicted on Exhibit A, for the purpose of performing the remediation described in Exhibit B (the "Work"). Such access shall include, without limiting the foregoing, ingress and egress across Airport property and in the Fire Pit Area to perform such activities, as well as the temporary use of the Fire Pit Area to perform the Work. Boeing will give the Airport three days notice

before beginning Work at the Fire Pit Area.

2. Work Plans. The "Work Plan" dated December 2, 1992 and "Remedial Action Plan" dated May 9, 1993 (collectively referred to herein as the "Work Plan"), attached as Exhibit B, describe the Work to be conducted and the approximate time frame for on-site activities. If Boeing determines that Work additional to or different from that described in Exhibit B is appropriate, Exhibit B will be modified or supplemented if the change to the existing Work Plan is substantial. Such modified Work Plan will be provided to the Airport for concurrence that the Work Plan is acceptable as modified. To maintain flexibility for such matters as field and laboratory decisions, the Work Plan need not be modified for minor changes or additions.

3. Compliance with Applicable Laws. Boeing will be conducting the remediation as an independent cleanup action under the Washington Model Toxics Control Act regulations, Chapter 173-340 WAC. Boeing shall at all times conduct the Work authorized hereunder in accordance with any and all applicable statutes, orders, rules and regulations. Within 90 days after the completion of the Work, Boeing will submit a report of the independent cleanup action to the Washington Department of Ecology pursuant to WAC 173-340-300(4), and will provide the Airport with a copy thereof. If Boeing discovers other information which it believes must be reported by law, Boeing will provide the Airport with a copy of the information reported.

4. Contractor. As of the date hereof, Boeing contemplates utilizing the services of RCI Environmental Inc. as its "Contractor" to perform the Work in the Fire Pit Area. Boeing shall notify the Airport of any other Contractor(s) who will be performing any portion of the Work in the Fire Pit Area.

5. Boeing's Use of the Property. Boeing shall exercise its rights under this Agreement and shall assure that the Work is performed so as to minimize and avoid, to the extent reasonably practicable, interference with operations at the Airport. The Airport agrees that it will coordinate with Boeing to assure that Boeing is aware of the Airport's operational constraints. The Airport retains both the right and obligation to assure compliance with operational requirements imposed on the Airport by regulatory authorities (e.g., by the Federal Aviation Administration).

The parties contemplate that the Work in the Fire Pit Area will involve various activities as described in the Work Plan, including excavation of soils and removal of an underground storage tank. The parties also contemplate that Boeing or its Contractor will recycle and/or dispose of excavated materials offsite, as necessary, and in such case, the Airport releases title to such excavated materials. After completion of the Work, Boeing agrees to conduct the site restoration activities described in the Work Plan.

6. Sampling and Sampling Results. The Airport shall be provided with notice of the time for planned sampling, and shall have the opportunity to take split samples if it so desires. Boeing and Contractor shall provide the Airport with the results of sampling conducted in the performance of the Work under this Agreement. If the Airport elects to take split samples, it agrees to provide Boeing with a copy of any test results therefrom.

7. Indemnity. Boeing agrees to defend, indemnify and hold harmless the Airport, its officers, agents and employees from and against any claim or liability for injury to or death of any person, or loss of or damage to any property, or other loss or damage, to the extent such claim or liability arises as a result of the presence or activities of Boeing or any Contractor of Boeing at the Fire Pit Area pursuant to this access agreement, or is otherwise related to or arises from activities conducted by Boeing or any Contractor of Boeing pursuant to this access agreement; provided, that Boeing shall not be responsible to the Airport for any claim or liability to the extent such claim or liability is caused by the acts or omissions of the Airport, its officers, agents or employees. The Airport will give Boeing reasonable notice of any known claim which falls within the scope of this paragraph. The Airport will cooperate with Boeing in the defense of any such claim or liability.

8. Term. The term this Agreement shall expire six months from the date first written above, unless earlier extended by the parties in writing.

9. Notice. Notices relating to the matters covered by this Agreement shall be given in writing as follows:

To County:

Don Smith, Manager
King County International Airport
P.O. Box 80245
Seattle, WA 98108

To Boeing:

Paul J. Johansen
The Boeing Company
P.O. Box 3707, M/S 7E-EJ
Seattle, WA 98124-2207

711/TMM

Notices shall be deemed effective (a) if mailed, upon the third day following deposit thereof in the United States, mail, postage prepaid, or (b) if otherwise given, upon delivery thereof. Either party may change the address to which notices may be given by giving notice as above provided.

10. Exhibits. All exhibits identified in this Agreement are attached hereto and, by this reference, are made a part of this Agreement.

EXECUTED as of the date first written above.

King County International Airport
The Boeing Company

By:_____
By:_____
Don Smith, Manager

Title: _____

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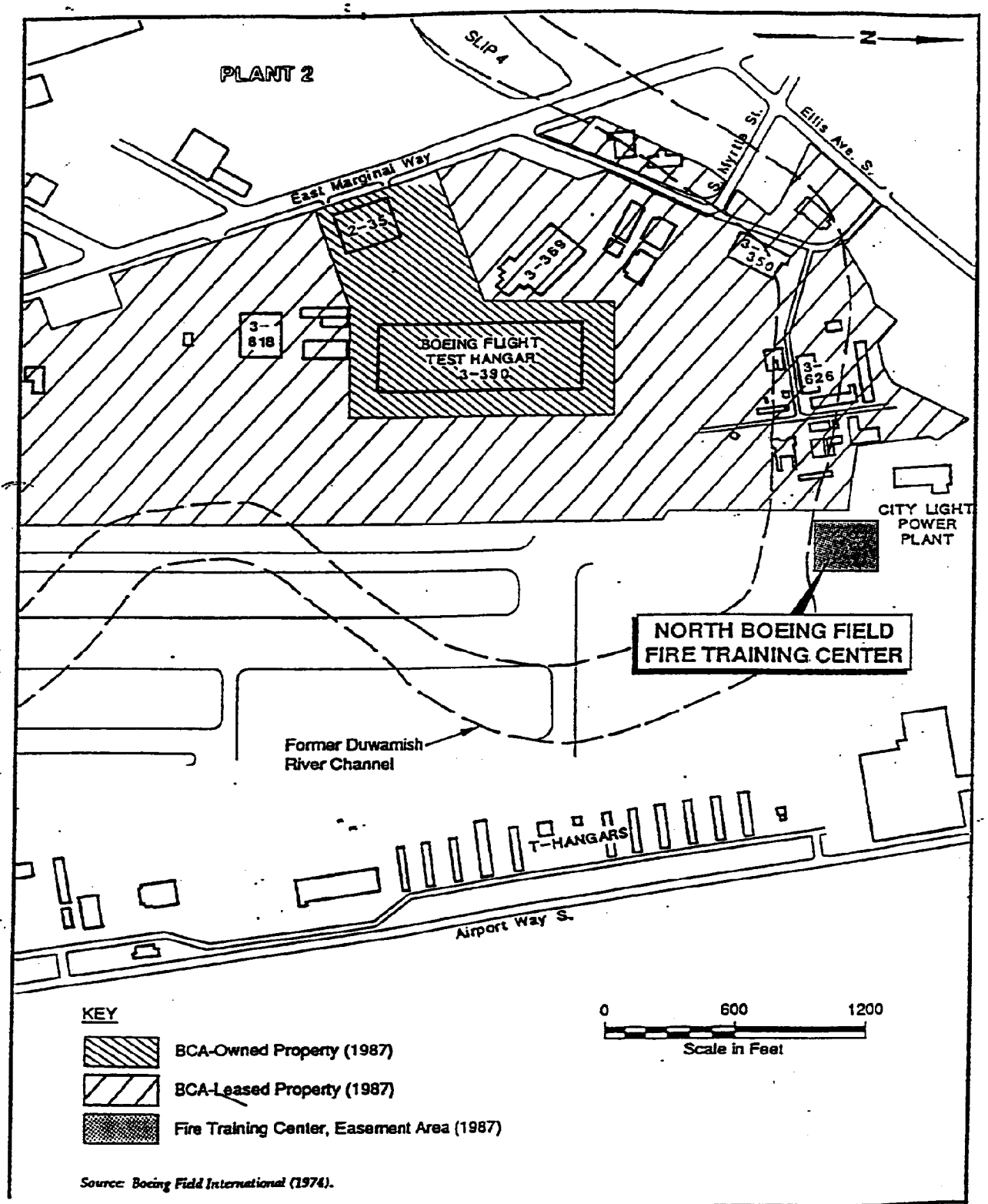

25-66.10 Boeing EA/Dbg Co. Airport/NBF Fire Training Center/Site Characterization Study/Work Plan 3/92 DRAFT

Location Map
North Boeing Field Fire Training Center

Exhibit A

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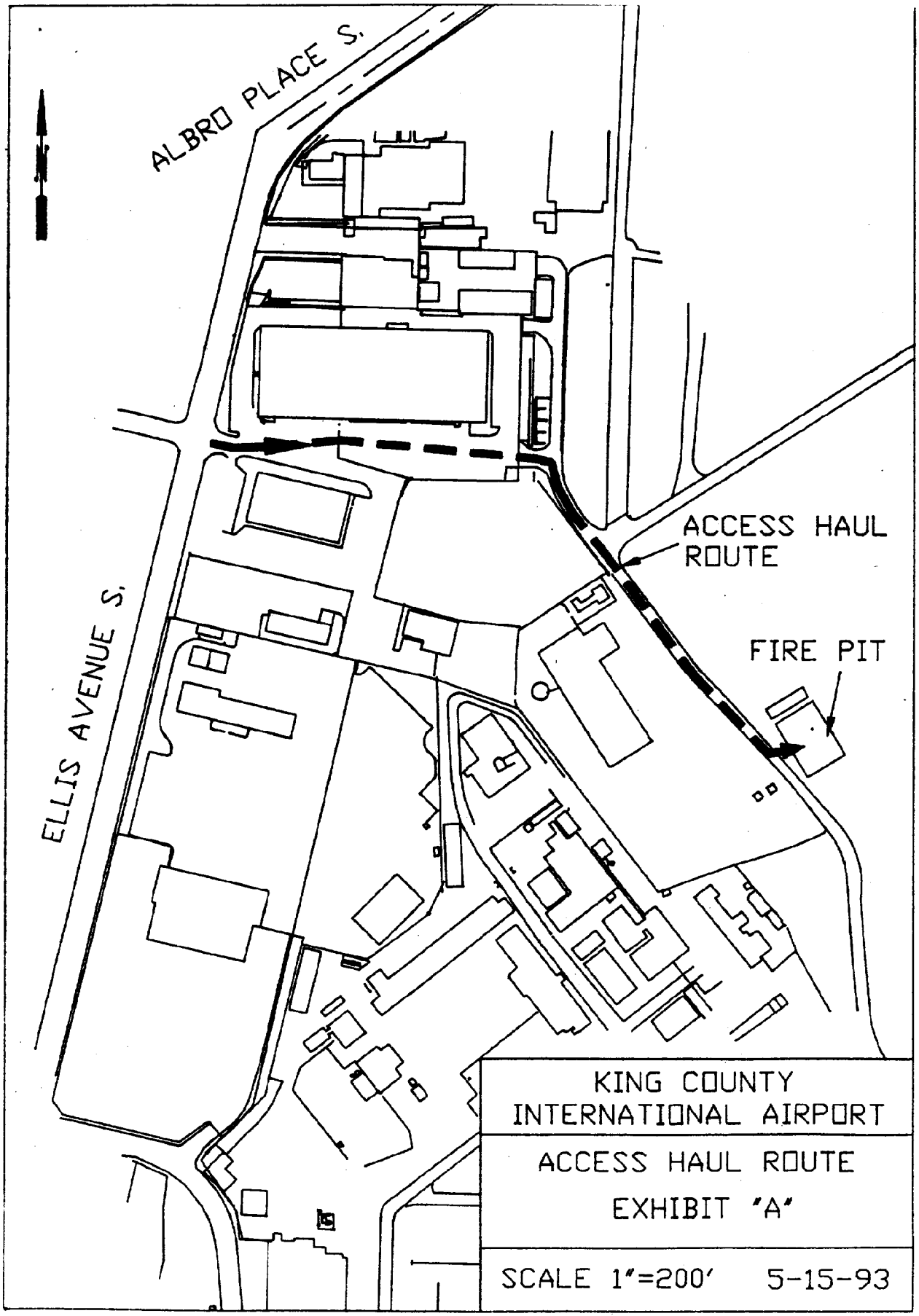

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